This is a 15 minute quiz, worth 5% and marked out of 5 points.

Name (please print): —————————————— . **ID Number:** ——————— .

last   first

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1. [1] Determine the following limits.

(a) $\lim_{x\to\infty} \frac{6x^2-x+1}{4x^4-3x^3+5x} =$ ————————————

(a) $\lim_{x\to\infty} \frac{6x^4+2x^3+1}{-4x^4+5} =$ ————————————

2. [1] The function $f(x) = \frac{3x^3+2}{x^3-2x^2+4}$ has (a) horizontal asymptote(s) at
(circle none, one or more) $x = 2$ / $x = 3$ / $y = 2$ / $y = 3$ / $y = 4$ /

3. [1] Determine the following limits.

(a) $\lim_{x\to 4^-} \frac{x^2+2x-1}{(x-4)(x+3)} =$ ————————————

(a) $\lim_{x\to 2^+} \frac{x+5}{x^2-5x+6} =$ ————————————

4. The function $f(x) = \frac{1}{x^2-3x-10}$ has (a) vertical asymptote(s) at
(circle none, one or more) $x = -2$ / $x = -3$ / $x = 4$ / $x = 5$ / $y = 2$ / $y = 2$

5. The function $f(x) = (3x+5) - \frac{7}{2x-1}$ has (a) oblique asymptote(s) at
(circle none, one or more)
$x = 3x + 5$ / $y = 2x - 1$ / $y = 7$ / $y = \frac{7}{2x-1}$ / $y = (3x+5)$

(1) $0, -\frac{6}{4} = -\frac{3}{2}$

(2) $y = 3$

(3) $-\infty$ (from calculator); ∞ (notice $\frac{x+5}{x^2-5x+6} = \frac{x+5}{(x-3)(x-2)}$)

(4) $x = -2$, $x = 5$ (notice $\frac{1}{x^2-3x-10} = \frac{1}{(x-5)(x+2)}$)

(5) $y = 3x + 5$